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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,855	11/20/2001	Naum V. Gitis	3123-149-1-1	1312

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EXAMINER

OMETZ, DAVID LOUIS

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 06/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/991,855	Applicant(s) GITIS ET AL	
	Examiner David L. Ometz	Art Unit 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 March 2002.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-16, 20-22, 29-40, 48-50, 54-61, 63, 64 and 66-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 71 is/are allowed.
- 6) ☒ Claim(s) 5-11, 13, 15, 16, 20-22, 29-40, 48-50, 54-61, 63, 64, 66-70 is/are rejected.
- 7) ☒ Claim(s) 12 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 5, 6, 9-11, 15, 16, 20-22, 30-33, 35-38 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 02-101687.

3. Claim 70 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 63-136370.

4. Claims 40, 48-50, 54-61, 63, 64, 67, 68 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Inumochi (US Pat 4939603).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 02-101687 in view of Inumochi. JP '687 shows a magnetic head slider in figures 1 and 2 and 4(b) that has V-shaped (wedge-shaped) air bearing rails 2 with tapered leading edges 1. However, JP '687 does not show the rails being of a U-shape or parabolic shape. Inumochi shows a magnetic head slider that has parabolic, U-shaped rails. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the V-shaped rails of JP '687 with the U-shaped rail as taught by Inumochi as doing this would have been a matter of

Art Unit: 2652

design choice to one of ordinary skill in the art. Whether the shaped of the rail was in a Y-shape or a U-shape, debris would be effectively deflected away from the air bearing rail surface, therefore preventing dust from being introduced to the bearing plane.

7. Claims 13, 29, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 02-101687 in view of Yoneoka (US Pat 5212608). JP '687 shows a magnetic head slider in figures 1 and 2 and 4(b) that has V-shaped (wedge-shaped) air bearing rails 2 with tapered leading edges 1. However, JP '687 does not show the rails being of a uniform thickness, i.e. taperless at the leading edge. Yoneoka shows a magnetic head slider in figure 10 that has taperless rails 1,1' that are of uniform thickness from the leading edge to the trailing edge of the slider. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to remove the taper from the leading edge of the slider of JP '687 as taught by Yoneoka. The rationale is as follows: one of ordinary skill in the art would have been motivated to remove the taper as doing this would lower the fly height of the slider and prevent deposition of particles onto the disk caused by the compression of floating gas at the tapered section as taught by Yoneoka, col. 1, lines 57-65, and col. 2, lines 56-65.

8. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inumochi (US Pat 4939603) in view of Yoneoka (US Pat 5212608). Inumochi shows a magnetic head slider in figure 1 that has U-shaped (parabolic/hyperbolic-shaped) air bearing rails 2 with tapered leading edges 3. However, Inumochi does not show the rails being of a uniform thickness, i.e. taperless at the leading edge. Yoneoka shows a magnetic head slider in figure 10 that has taperless rails 1,1' that are of uniform thickness from the leading edge to the trailing edge of the slider.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention

Art Unit: 2652

was made to remove the taper from the leading edge of the slider of Inumochi as taught by Yoneoka. The rationale is as follows: one of ordinary skill in the art would have been motivated to remove the taper as doing this would lower the fly height of the slider and prevent deposition of particles onto the disk caused by the compression of floating gas at the tapered section as taught by Yoneoka, col. 1, lines 57-65, and col. 2, lines 56-65.

9. Claims 39 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over one of either Inumochi (cl. 69) or JP 02-101687 (cl. 39) in view of Morita et al (US Pat 5080948).

Inumochi and JP '687 all shows magnetic head sliders that fly at close distances above a rotating magnetic disk as noted above. However, all are silent as to the exact flying height of the slider (as claimed 1-3 microinches (or approx. 25nm-76nm)). Morita et al discloses a magnetic head slider and rotating disk assembly that includes the slider flying at heights between 10-90 nm (see col. 10, lines 1-2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the sliders of Inumochi or JP '687 fly at heights within the claimed range as taught by Morita et al as those flying heights are "effective for floating performance and CSS durability" as taught by Morita et al, col. 10, lines 1-2.

10. Claim 71 is allowed.

11. Claims 12 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Applicant's arguments filed 3/25/02 and attached to paper number 5 have been fully considered but they are not persuasive. Applicant asserts on page 6 that JP 02-101687 does not show the claimed "said leading edge has a narrower width as compared to said trailing edge,

Art Unit: 2652

extends to said body, is spaced from outer side surfaces of said body, and is not part of a flat surface.” However, the examiner maintains that JP ‘687 shows a slider in figures 1 and 4b wherein the pointed V-shaped rail shown in figure 4b is a variation of the pointed rail shown in figure 1. The pointed rail shown in fig. 4b extends to the body, is spaced from outer side surfaces of the body, and is not part of a flat surface. Therefore, the rejection over JP ‘687 is still deemed proper and has been maintained.

Applicant further asserts on page 7 that Inumochi does not show the leading edge is narrower than the trailing edge as recited in claim 40. However, it is the examiner’s position that claim 40 defines the rails themselves as having leading and trailing edges, and that the U-shaped ridgeline 8 of Inumochi is the “leading edge” of the rail. There is no need for the leading edge of the rail to coincide with the leading edge of the slider body.

Applicant further asserts with regard to claim 70 that JP 63-136370 does not show the leading edge of the rail being the narrow part of a V-shaped portion. However, the examiner maintains that the rails of JP ‘370 are V-shaped with the leading edge being the narrow portion of the V-shape. The rails need not come to a crisp point in order to be considered “V-shaped”.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

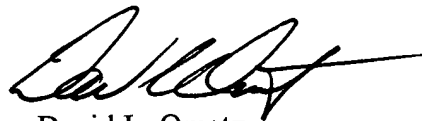
Art Unit: 2652

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Ometz whose telephone number is (703) 308-1296. The examiner can normally be reached on M-F, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703) 308-4825. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.



David L. Ometz  
Primary Examiner  
Art Unit 2651

DLO  
June 11, 2002